DITOGEAR™

OMNICONTROLLER

USER'S MANUAL

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1. Getting started

Thank you for purchasing the DitoGear™ OmniController and DitoGear™ motion control equipment. We hope that the device will meet your expectations bringing a great value to your productions.

Please follow the instructions in this manual to learn how to get the most of OmniController and DitoGear™ motion control devices.

Please ensure to carefully read the safety instructions and precautions contained in this manual and corresponding motion control equipment manuals prior to use of the device.

Should you need any assistance or support do not hesitate to contact us at support@ditogear.com.

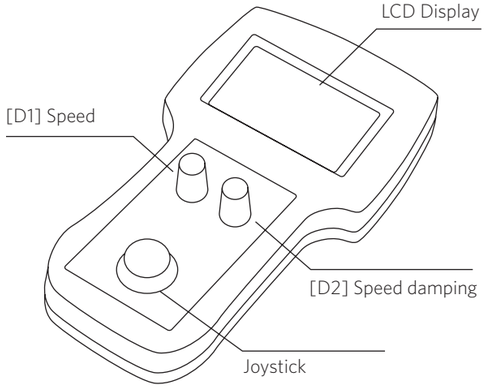
Product version information

This manual refers to OmniController V2 version dated 2014 and firmware build: 2.1 OC140401

Latest product manuals can always be found at:
www.ditogear.com/user-manuals

2. Getting to know OmniController

The DitoGear™ OmniSlider Controller is an electronic device designed to control DitoGear™ motion control devices with ease and precision.



The controller can control one axis at a time and consists of the following elements:

1 An RJ45 signal cable socket at the bottom back of the controller

2 A sync port located at the back of the controller underneath the LCD

3 A multiline LCD display

4 A 4-directional, 1-button analog joystick used to navigate through the menu system and control the device. Press the joystick to select the options in the menu and access special functions (referred to as [Select] in the manual)

5 The speed adjustment dial, situated on the left of the controller, is used to adjust the speed of the trolley (referred to as [D1] in the manual)

6 The speed damping dial, situated on the right of the controller, is used to adjust the speed damping (acceleration and deceleration) of the trolley (referred to as [D2] in the manual)

2.1 Firmware versions & upgrades

Since firmware version 2.1 the angular/linear firmware flavors have been merged. Current firmware version supports both operation modes - angular and linear covering all types of DitoGear™ devices.

The firmware can't be upgraded on your own, so you will need to send us the controller for a free firmware upgrade. Since the product is already matured, the updates are less frequent and usually have minor impact on the feature set.

Please refer to the following page to check the latest firmware available.

http://ditogear.com/products/omnislider/firmware/

3. Connecting the OmniController

Follow the instructions below to setup the device for basic operation.

1 Prepare your motion control unit and/or your camera for work.

2 Connect an RJ45 type signal cable to the motion control unit and to the Output port of a DitoGear™ Breakout Box.

3 Connect an RJ45 type signal cable to OmniController and to Input 1 port of the Breakout Box.

In case of OmniHead: Connect two RJ45 type signal cables to two OmniControllers and to Input 1 & 2 port of the Breakout Box.

4 Connect a shutter release cable to Sync 1 port (2.5mm micro jack) of the Breakout Box. Connect the other end to your camera. This step is optional.

5 Connect the power source – a DitoGear™ Power Pack 7Ah/14Ah, a DitoGear™ AC/DC power adapter or a 3rd party compatible power source to a Power port of the Breakout Box. It may be required to fully charge the battery prior to first use of the device. For high-payload OmniSlider operation: Connect the power source – a DitoGear™ Power Pack 7Ah/14Ah, a DitoGear™ AC/DC power adapter or a 3rd party compatible power source directly to DitoGear™ OmniSlider Power port.

6 At this point the controller should light up showing main menu.

4. Using OmniController

4.1 Initial controller settings

In order to operate motion control device, the initial configuration must be set. Some additional settings are required after each power-up routine.

4.2 Choosing shutter control style

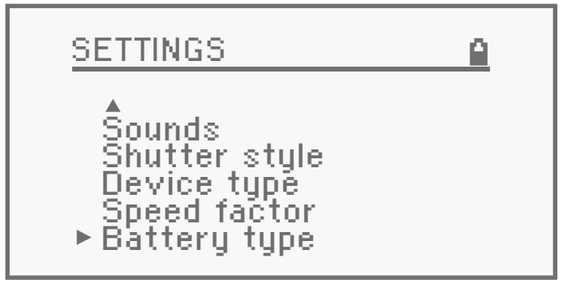
Depending on your equipment cabling variant (legacy 8-pin or RJ45), an appropriate shutter release triggering mode should be chosen. The setting is stored in a non-volatile memory, so you don't need to set it back again after power outage.

Go to **Settings » Shutter style**

4.3 Choosing Battery Type

Before you start working with the equipment, make sure to choose an appropriate power option. Li-ion or gel options are available. Use li-ion for DitoGear™ PowerBrick and gel for any other power sources.

Go to **Settings » Battery type**

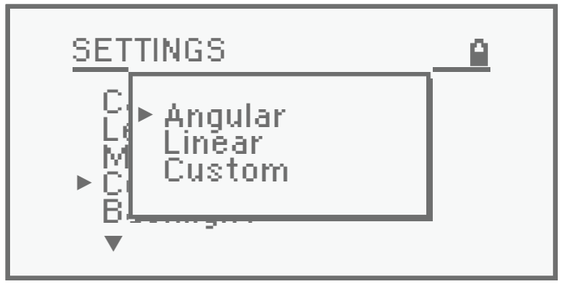


4.4 Setting the device type

Choose the device type corresponding to your motion control equipment from the settings menu.

To select the device navigate to:
Home » Settings » Controlled device

The following options are available:



Angular lets you operate an angular type of DitoGear™ device. There are two options available: Lens Drive 3 and OmniHead. For previous editions of Lens Drive use custom settings and contact DitoGear™ Support for configuration details.

Linear lets you operate a linear type of DitoGear™ device. There are three options available:

- **Omni Stepper** lets you operate DitoGear™ OmniSlider with a stepper motor
- **Omni Servo** lets you operate DitoGear™ OmniSlider with a servo motor
- **BD/Modulo/Motion Kits*** lets you operate DitoGear™ BD Slider, DitoGear™ Modulo Dolly and DitoGear™ MotionKits
- **Modulo Rover** lets you operate DitoGear™ Modulo Rover

*) For Kessler Crane devices use custom setting as described below.

Custom lets you operate a custom DitoGear™ device equipped with a servo motor.

These options are designed for future applications and for advanced users. Please contact DitoGear™ Support to obtain detailed instructions on how to use them if necessary.

The following screen confirms your choice:

The device setting is stored in the persistent, non-volatile memory and thus it is required to be set only once or when you plan on changing controlled device.

Note: changing the device type may apply changes to the travel length settings, so make sure to check the length and calibration after setting the device type.

4.5 Device type

To select the device type navigate to:
Home » Settings » Device type

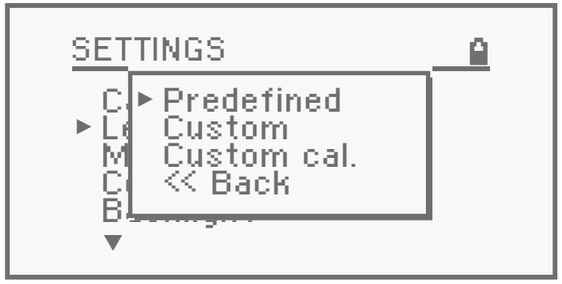
Device type allows to switch between angular and linear units. This parameter is automatically set while selecting Controlled Device. It is only needed to amend this setting when you use custom Controlled Device setting.

4.6 Setting the travel length

To set the travel length, navigate to:

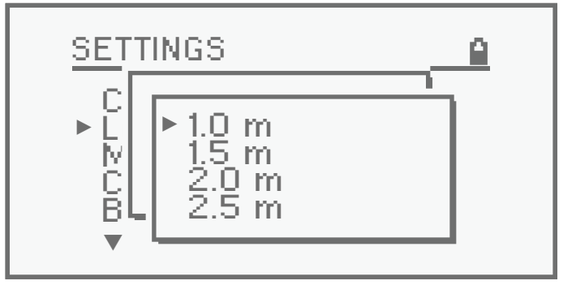
Home » Settings » Length/Angle

The following options are available:

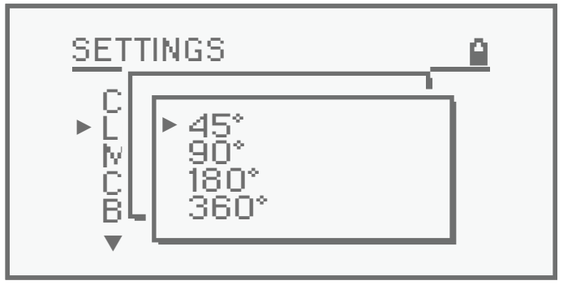


The **Predefined** option allows to select one of the predefined travel lengths depending on the device type:

Linear



Angular

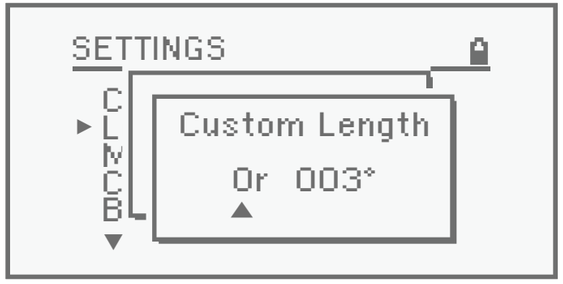


Note: In order to allow for multi-revolution moves with OmniHead or LensDrive use Custom settings as described below.

The Custom option lets you type in travel length either in metric or angular units depending on the device type:

Linear

Angular



The **Custom Calibration** option allows to define the operating length by travelling the desired distance using the joystick. After selecting the **Custom Calibration** option, the controller assigns the current position of the trolley as the start limit (the In Point).

Move the axis to the end position and confirm the defined travel length by pressing the joystick. The distance travelled is displayed for your convenience (the Out Point).

Note: changing the travel length always resets the In Point calibration to current position.

4.7 Speed Factor

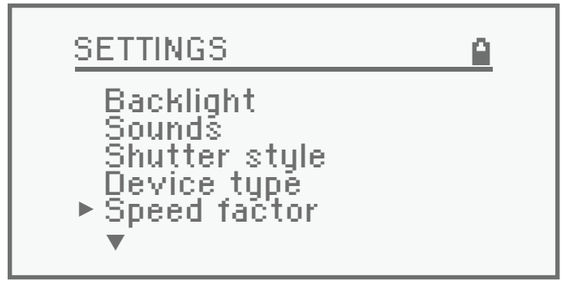
Speed Factor parameter is responsible for properly controlling various motor types used across DitoGear™ motion control devices. Speed Factor is set automatically once the device type is chosen in Settings and should not be modified. Default values are listed below:

- OmniSlider Servo 1
- OmniSlider Stepper 3
- BD Slider / Modulo 2
- OmniHead 2
- LensDrive 3

Tweaking Speed Factor affects maximum speed of the device and also to some extent its precision - the lower the Speed Factor, the higher max speed of the device.

The default setting for OmniSlider Servo is 1 and therefore its max speed can't be increased. Whenever you tweak default settings, make sure to watch out for overload/stall beep signal and be aware that the device may not perform reliably.

To change the speed factor navigate to:
Home » Settings » Speed factor



4.8 Calibrating the device

Every DitoGear™ motion control device come with an internal position memory feature and therefore needs to be calibrated prior to use after each power-up routine.

The calibration procedure is essentially setting the in-point of the movement. The out-point is calculated automatically basing on travel length setting.

Basic calibration

In order to perform basic calibration, adjust the device physically to the desired initial state prior to connecting the power.

For OmniSlider move the trolley to the end of the track closest to the motor box prior to turning on the device.

At power up, the OmniController assumes that the device is set physically to the starting position and no additional calibration is required.

Using Mirror mode

Linear devices

If after calibration the trolley does not move forward but stalls moving backward from the starting position, toggle the **Settings » Mirror** option.

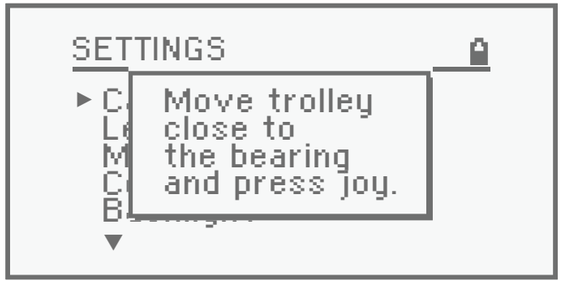
Angualr devices

If you want to reverse the direction of movement toggle: **Settings » Mirror** option.

Manual re-calibration

You may want to re-calibrate the device to manually set the in-point after power-up routine.

To do so, navigate to: **Settings » Calibration** and follow the on-screen instructions.



If the device hits the physical movement limit and you hear the internal low-level motor controller warning sound, press the internal controller reset button (OmniSlider Servo, LensDrive) or disconnect and reconnect signal/power cable (OmniHead, Modulo) and confirm the calibration with the joystick.

OmniSlider

Calibrating the OmniSlider for diagonal and vertical operation

For safety reasons when operating vertically or diagonally the setup procedure requires that the motor be placed on the upper end and the trolley at the lower end prior to powering up the device. Due to this fact, a different calibration routine is required.

Option 1.

Place the load at the lower end of the rail, power up the device and use manual calibration feature to calibrate the device moving the motor from the lower end to the upper end and confirm calibration.

Option 2.

Place the load at the lower end and power up the device. **Toggle Settings » Mirror** option so that the controller assumes that the initial position of the slider is at the farthest point from the motor.

Important Note!

While changing one of the settings such as: controlled device type, length or calibration make sure to always do the changes in the following order:

1. Set the controlled device type
2. Set the travel length
3. Perform calibration

4.9 Controlling the movement

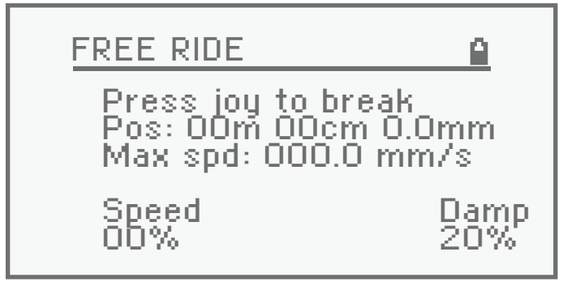
In selected modes you may control the device or one of its axes in real time using the **Joystick** and **[D1]**, **[D2]** dials.

The **[D1]** dial allows to adjust max speed of the axis. It may also be used to control the speed during the move.

The **[D2]** dial allows to adjust the speed damping parameter (acceleration and deceleration time). On higher speeds (above 70%) some basic auto dampenning is always applied regardless of the setting. When it occurs, a flashing information message will be displayed on the controller screen.

The **Joystick** lets you control motion. Move it left or right to move the axis. The **Joystick** is analog and proportional - the more you move it off its axis, the faster the move. Please note that you may also use **[D1]**, **[D2]** dials during the move.

The controller screen displays the current state of the device including speed, max speed, damping (acceleration) and device position either in metric or angular values.



4.10 Using the emergency break feature

In the free ride mode as well as in other modes where the axis motor movement is possible, there are two ways to stop the movement immediately ignoring speed dampening parameter or interrupting the playback.

1. Move the joystick quickly to in the opposite direction - the speed damping parameter will be ignored and the movement direction will be changed immediately.

2. Press the joystick - the motor will stop immediately.

Note: Each of DitoGear™ motion control devices operates within the in-point and out-point limits defined during calibration. While approaching the limit either at in-point or out-point, the automatic motion stop is immediate. Please take it into consideration and avoid it especially when operating under high payloads as it may damage your equipment!

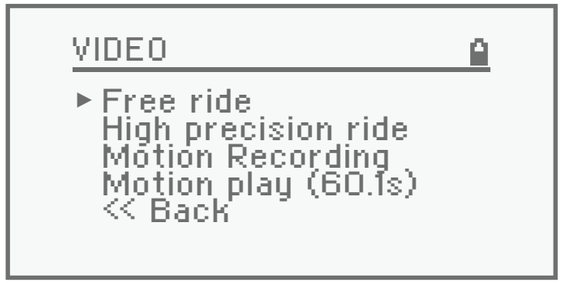
Important Note: When operating OmniSlider Servo with AC/DC power at speeds above 85% and the trolley reaches the calibration limit or when the emergency break is triggered, the system sends an immediate stop signal to the motor. The energy of the motor has to be released and therefore, generates high current. This may cause the DC adapter's protection to cut the power off. The controller will reset. Please use high speeds carefully and avoid immediate stops.

5. Video Modes

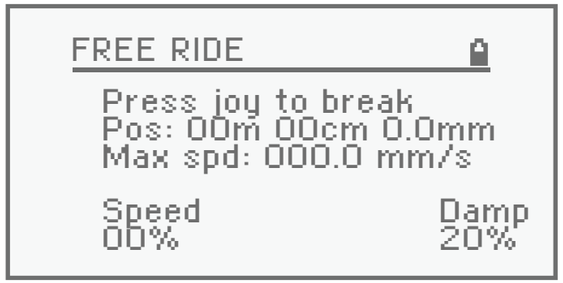
Free ride mode

Free ride is a basic operation mode suitable for real time filming purposes and shot rehearsing. Similar operation patterns are used across other modes such as motion recording.

To access free ride mode select:
Home » Video » Free ride.



You may control the movement of the axis using the joystick and dials as described in **Controlling the movement.**



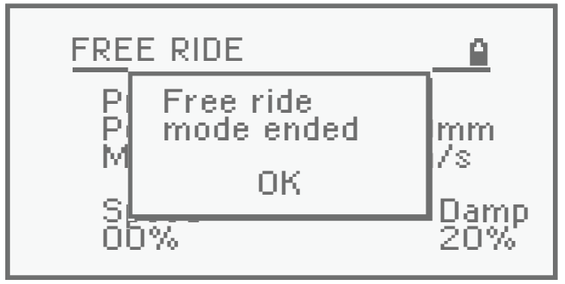
Maximum speed in free ride mode are approximately:

(OmniSlider)	288 mm/s
(OmniHead)	49.3°/s
(LensDrive)	95.6°/s

Note: the emergency stop is triggered by pressing the joystick.

Note: In case of the OmniSlider Stepper - the maximum speed in free ride mode only concerns a low-payload.

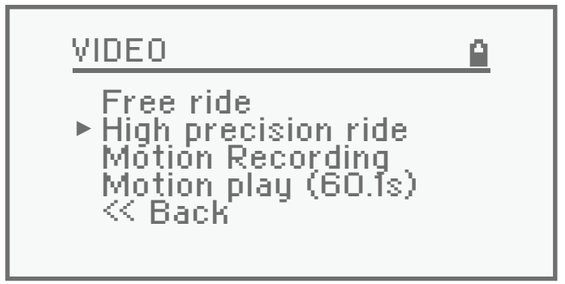
The following screen confirms the end of free ride mode operation:



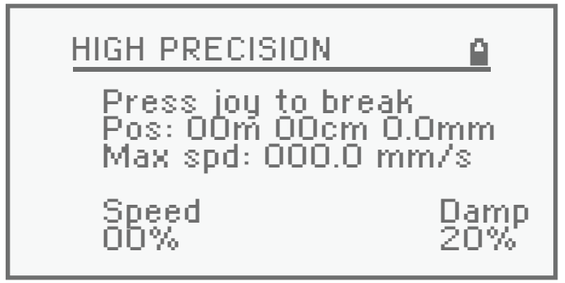
High Precision Ride

High Precision Ride is similar to Free Ride mode but allows you to operate within limited speed range, thus it is suitable for shooting macro or for other precision-demanding applications.

To access free ride operation mode select
Home » Video » High precision ride.

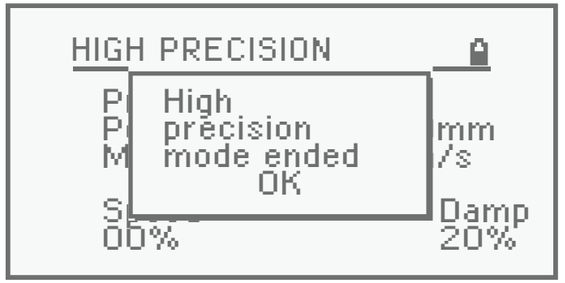


You may control the movement using joystick and dials as described in **Controlling the movement.**



Note: the emergency stop is triggered by pressing the joystick.

The following screen confirms end of high precision mode operation.



6. Motion Recording & Playback

Overview

OmniController is capable of recording and playing back up to 80 seconds of continuous motion. Recorded motion can be played back either in real time or with the time stretch applied.

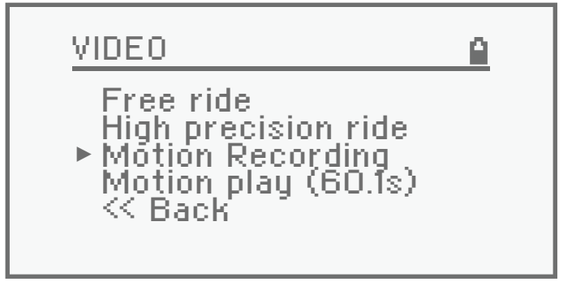
Time stretch may be used for more demanding timelapse, stop motion, or real time filming shots.

There is one persistent, non-volatile memory bank for recording, so it does not reset after power cutoff.

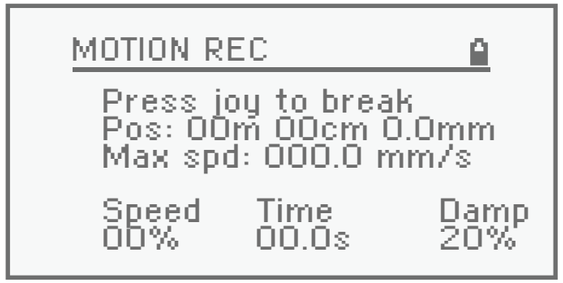
Please note that the recorded motion might differ slightly from your real time performance due to the data reduction and interpolation methods. However, each time you play back the recorded program, it will play in fully repeatable manner and can be used for sophisticated shots and special effects.

Accessing Motion recording mode

To access motion recording features select:
Home » Video » Motion Recording



Recording motion



After selecting the Motion recording mode the current position of the axis is registered as home position. All playback will be started from that position.

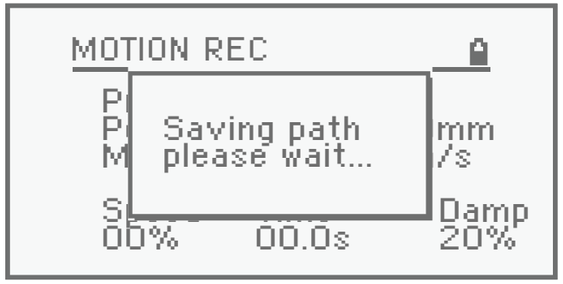
In addition to common readouts, the Motion recording screen displays additionally elapsed recording time.

The recording starts as soon as you move the joystick for the first time. Changing the **[D1]** or **[D2]** dials at the starting screen prior to moving trolley will not trigger recording.

You may either use the full recording buffer available or stop recording anytime by pressing the joystick. It is good practice to leave a 2 second gap prior to confirming the end of recording.

Note: Emergency stop is triggered by pressing joystick.

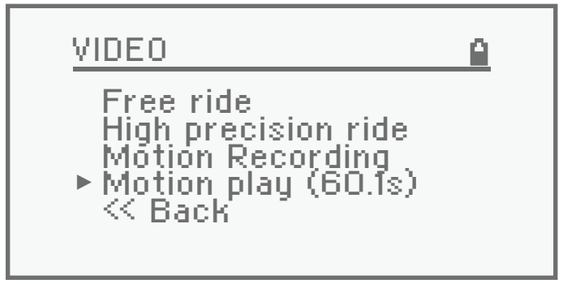
When the recording is completed, the notification screen appears showing data saving progress.



The following screen confirms the end of saving data.

Playing back motion

To access motion playback features navigate to:
Home » Video » Motion Playback



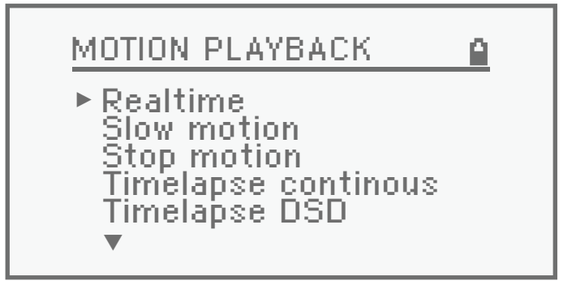
The number in brackets next to menu item indicates the length of the current recording.

There are 5 main motion playback options:

1. **Realtime mode** plays back motion in real time.
2. **Slow motion mode** plays back motion slowly, stretched by a specific factor.
3. **Stop motion mode** allows for use of recorded motion as a basis for stop motion sequence.
4. **Timelapse continuous mode** allows for use of recorded motion as a basis for continuous timelapse sequence.
5. **Timelapse DSD mode** allows for use of recorded motion as a basis for a drive-shoot-drive timelapse sequence.

Realtime playback

To play back recorded motion select
Home » Video » Motion Playback » Realtime

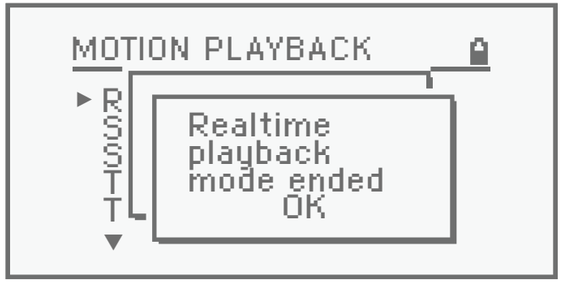


You will be prompted to get back to home position and thereafter, the playback starts.

Playback progress is displayed on the following screen:

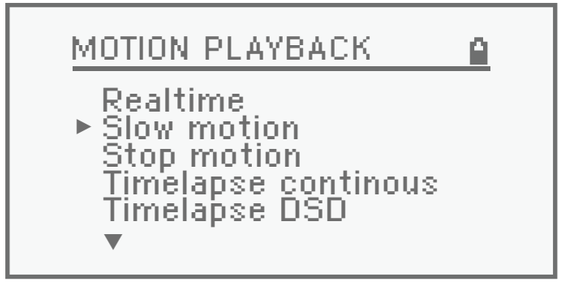
Note: the emergency stop is triggered by pressing the joystick.

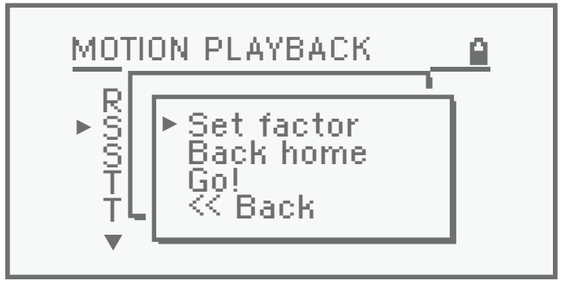
The following screen confirms end of motion playback mode.



Slow motion playback

To access slow motion playback mode navigate to:
Home » Video » Motion Playback » Slow Motion





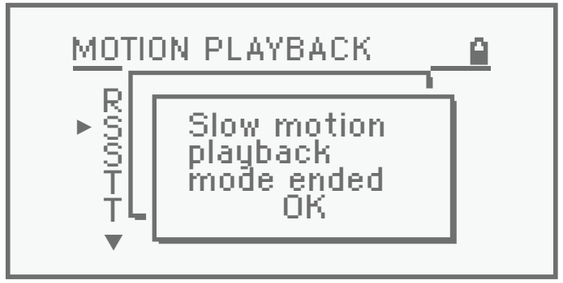
Set Factor option allows you to set the desired stretch factor of the recording. The playback time will be multiplied by an integer of your choice.

As soon as you are ready, select **Back Home** and the playback will be started thereafter.

Playback progress is displayed on the following screen:

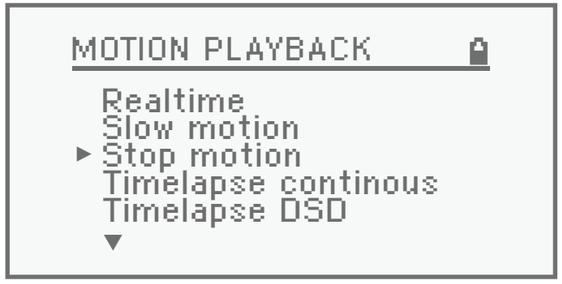
Note: the emergency stop is triggered by pressing the joystick.

The following screen confirms end of motion playback mode.

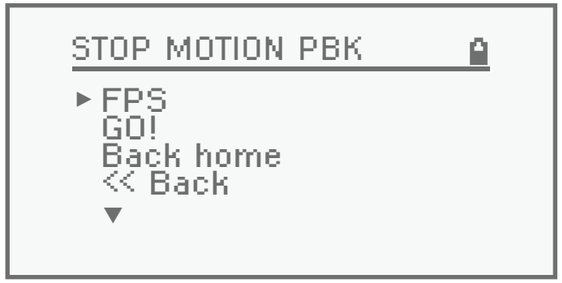


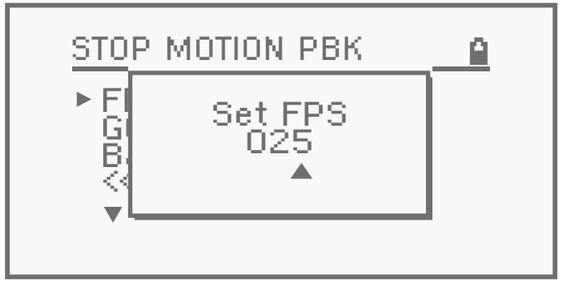
Stop motion playback

To access stop motion playback mode navigate to:
Home » Video » Motion Playback » Stop Motion



FPS option lets you select the desired FPS (frames per second) value to match your shooting standard.





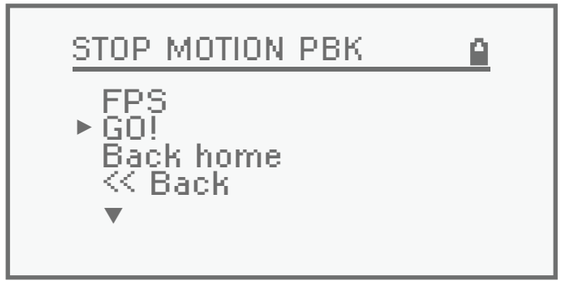
OmniController will perform all necessary math operations to divide the recorded motion into the required amount of segments and steps so that your stop-motion sequence matches the original recording.

For example, if your total recorded time is three seconds and you work at 25 FPS, the total travel length will be divided into 75 steps.

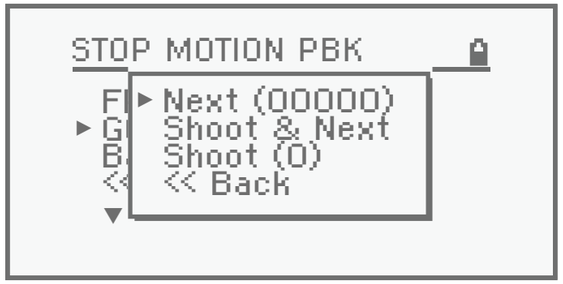
Also note that this may be useful for compositing. You will be able to record one real time video shot,
do another pass in stop motion mode and then composite those two passes seamlessly!

You may also enter different FPS rates to slow down a stop motion sequence - for example, setting 50 FPS while shooting for 25 FPS footage will double the exposures and may be useful in some situations.

When you're ready with your shot select the **Go!** option from the menu.



The following popup screen lets you take advantage of easy loop shooting.

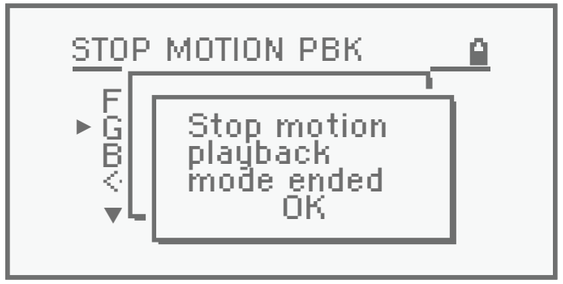


The Next option advances to the next step without triggering the shutter. The number in parentheses indicates the current shot number.

The **Shoot & Next** option will trigger the shutter and move to the next position.

The **Shoot** option will trigger the shutter as many times as pressed. The number in parentheses indicates the number of shots taken since last move.

The following screen confirms end of motion playback mode.



Timelapse continuous playback

To access timelapse continuous playback navigate to:
Home » Video » Motion Playback » Timelapse contiunuous

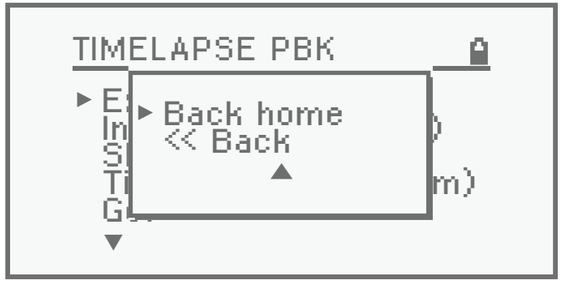
The continuous timelapse playback menu has similar features to standard timelapse. However, the direction feature is not present here because the playback is always performed starting at the home position along the recorded path.

You may set the Exposure time, the Interval time, and the total Shots. Adjusting the Time parameter will re-calculate the total Shots automatically.

Note: the interval refers to the time between the end of one exposure and the start of the next. It is not the time between the start of one exposure and the start of the next.

In order to start playback once your sequence settings are set hit **Go!**.

You will be prompted to go back to the home position and then the timelapse playback starts.

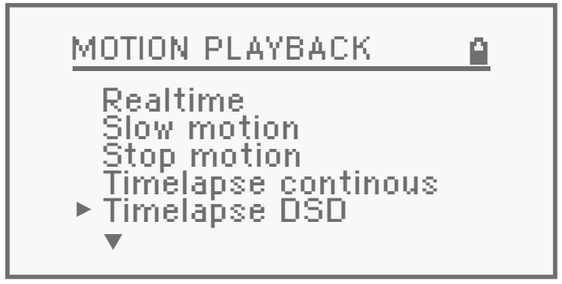


The following screen shows the progress of the timelapse playback.

The following screen confirms end of continuous timelapse playback.

Timelapse Drive-Shoot-Drive playback

To access timelapse DSD playback navigate to:
Home » Video » Motion Playback » Timelapse DSD



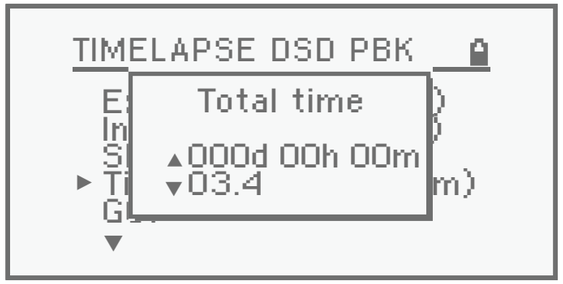
The drive-shoot-drive timelapse playback menu has similar features to standard timelapse. However, the direction feature is not present here as the playback because always performed from the home position along the recorded path.

You may set the Exposure time, the Interval time, and the total Shots. Adjusting the Time parameter will re-calculate the total Shots automatically.

Note: the interval refers to the time between the end of one exposure and the start of the next. It is not the time between the start of one exposure and the start of the next.

In the DSD timelapse playback mode the interval must be set to at least 0.5s.

The following screen will notify you in the case that the interval is too short.



In order to start playback once your sequence settings are set hit **Go!**. You will be prompted to go back to the home position and then the timelapse playback starts.

The following screen shows the progress of the timelapse playback.

The following screen confirms the end of DSD Timelapse Motion Playback.

Notes on motion playback modes:

1. The time stretching methods used in timelapse, slow motion and stop motion playback modes interpolate recorded data based on Bezier curves. The motion will be played back smoothly even if stretched significantly.

2. It is also recommended to avoid sudden acceleration to the top speeds and sudden changes in direction. Such fast changes may not be played back properly.

3. Due to technical limitations recorded programs can't be accelerated.

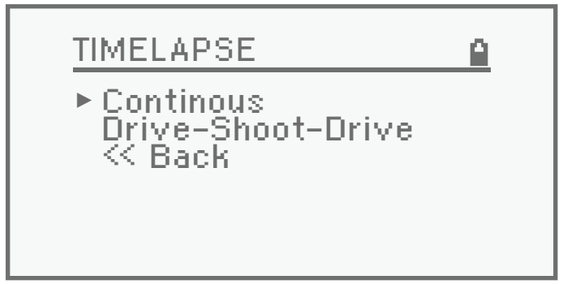
7. Using Timelapse Continuous mode

The Timelapse Continuous mode allows for continuous motion and exposure control of the camera.

The camera shutter may be triggered either using the OmniController (if you are using a compatible DSLR camera) or your own external intervalometer.

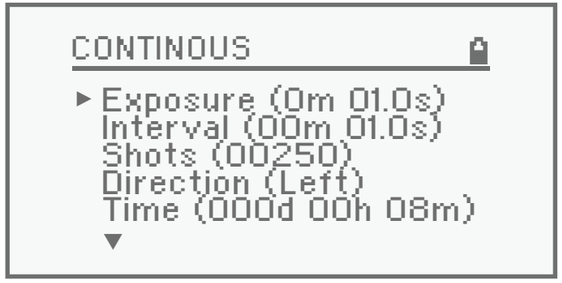
7.1 Accessing Timelapse Continuous mode

To access basic timelapse features navigate to: **Home » Timelapse » Continuous.**



7.2 Understanding timelapse mode

In timelapse mode you may control the exposure time, interval, number of shots, direction and total travel time.



Note: the interval refers to the time between the end of one exposure and the start of the next. It is not the time between the start of one exposure and the start of the next.

7.3 Controlling the exposure time

The exposure time only works effectively if the camera is set to Bulb exposure mode.

If you prefer that the exposure parameters be controlled by the camera, set the exposure time at the OmniController to 0.1s and set your camera to Manual or another non-bulb mode.

7.4 Setting up a continuous timelapse sequence

To set up a timelapse sequence, do the following:

1 Move the motor axis to the starting position.

1 Navigate to the Timelapse Continuous menu as described above.

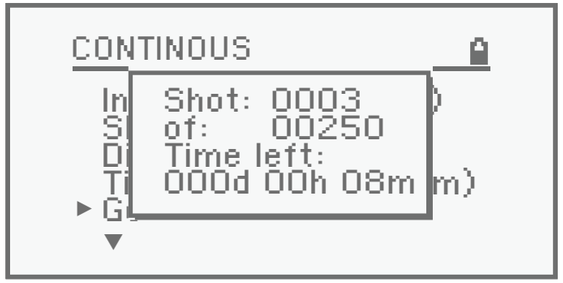
2 Select the exposure time, interval and number of shots.

3 Set the desired direction of the movement.

4 Optionally readjust the total time of the sequence. The number of shots will be adjusted to match your setting.

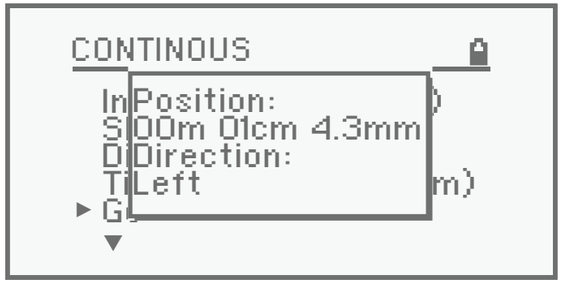
5 Select **Go**!

After starting the program you can track the progress on the following screen (similar to drive-shoot-drive timelapse mode):

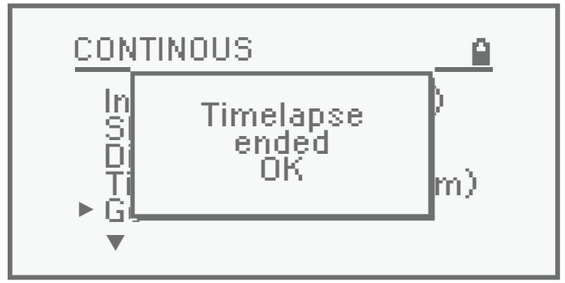


If you move the joystick up or down during the progress of the timelapse sequence, the additional parameters are displayed:

UP: displays current position and direction
DOWN: displays exposure and interval



As soon as the timelapse program is finished the following information screen appears:



7.5 Multiple exposures

It is also possible to trigger multiple image sequences from the OmniController. This may be useful either for shooting HDR, exposure-bracketed timelapse or multiple constant-exposure shots for noise reduction in post production.

To do so, set your camera to continuous shooting mode and set the exposure bracketing as desired.

In the OmniController set the total exposure time to exceed slightly the total time of 3 exposures (or another number if your camera is capable of shooting more than 3 bracketed images in a row).

Note: if timelapse is started from the middle of the travel length and the device is about to move past the limits set by the calibration, the timelapse program will be aborted.

8. Using drive-shoot-drive timelapse mode

The drive-shoot-drive timelapse mode (DSD) works similarly to the basic timelapse mode, but the camera stops for each of shots.

Accessing drive-shoot-drive timelapse mode

To access drive-shoot-drive timelapse features select **Home » Timelapse » Drive-shoot-drive**

Using the DSD mode

For instructions please refer to continuous timelapse mode documentation above in the manual.

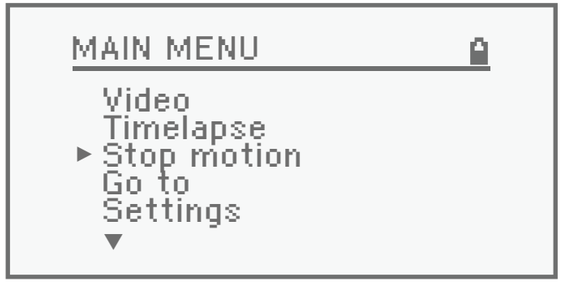
The only important note here is that the minimal interval between shots must be greater than or equal to 0.5s.

9. Using Stop motion mode

The OmniController is also capable of stop motion operation. This mode allows you to control shots independently and move the trolley after each shot (or a series of shots) upon confirmation.

Accessing stop motion mode

To access stop motion features navigate to: **Home » Stop Motion**



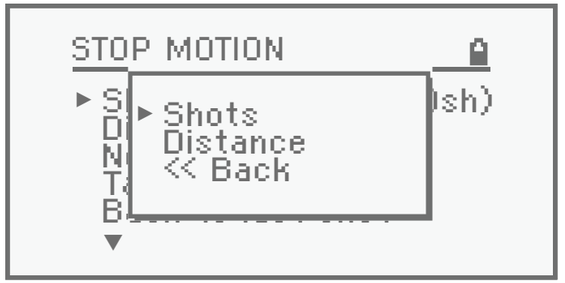
There are 2 operation modes: **Shots** and Distance. You may toggle stop motion modes by clicking on the first item of Stop motion menu.

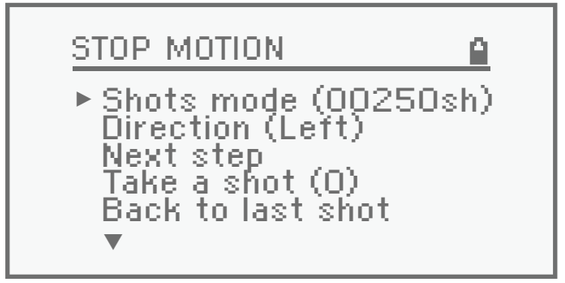
Using Shots Stop motion mode

The Shots Stop motion mode allows for manual control over the number of shots across the calibrated travel length. The calibrated travel length will be divided into even steps depending on the number of shots entered.

9.1 Setting up the number of shots

To set the number of shots select the first item in the Stop Motion menu, select Shots and enter the desired number of shots.



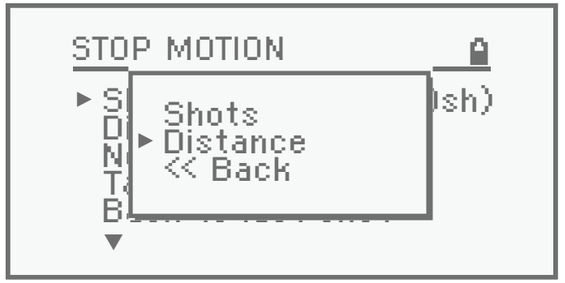


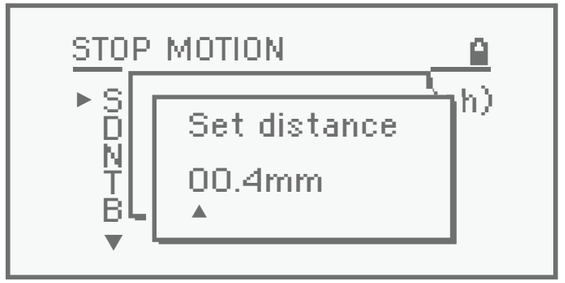
9.2 Using Distance Stop motion mode

The Distance Stop motion mode allows for manual control over the travel distance between each of shots.

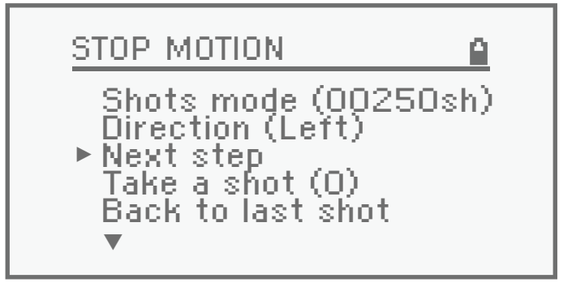
Setting up the travel distance

To set the distance select the first item in the Stop Motion menu, select **Distance** and enter the desired distance value.



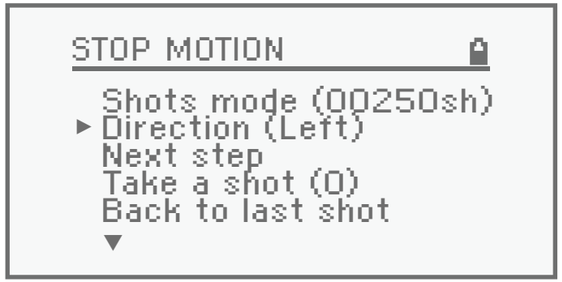


After setting the step distance to desired value, the number next to the **Next Step** item will be updated showing the absolute position of next step.



Setting up the direction

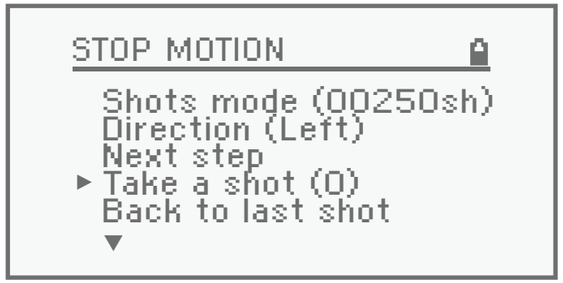
To toggle the direction of motion select:
Home » Stop motion » Direction



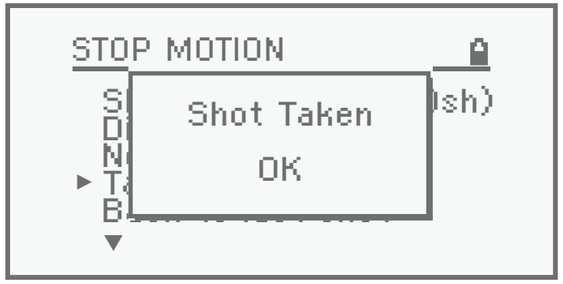
The current direction is displayed in the parentheses.

Taking a shot

Once your scene is set up properly, you are ready to take a shot. To do so, select **Home » Stop Motion » Take a shot.**



The following screen confirms that the shot has been taken.



You may also want to take multiple exposures per step. To do so, simply press the **Take a shot** menu option again.

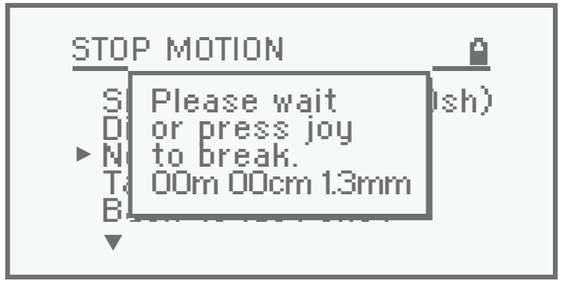
The number in parentheses indicates the number of shots taken since the trolley moved to the current position.

Moving to next position

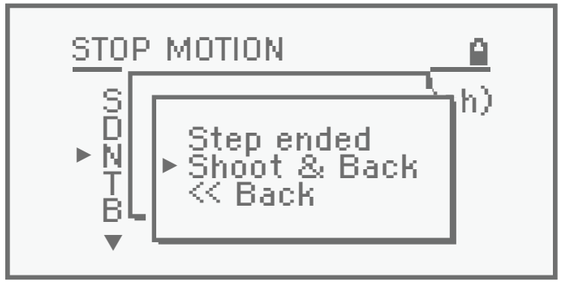
When you're done shooting it's time to move to the next position.

You can optionally change the distance and then select **Next Step** to advance to next position.

The following screen is displayed while the devicemoves to the next position.



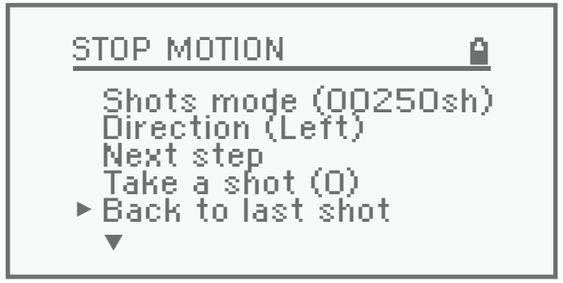
The following pop-up screen confirms that the step has been made. You may either take a shot and go back to the last menu (to make one shot per step loop work easier) or go back to previous menu without triggering a shot.



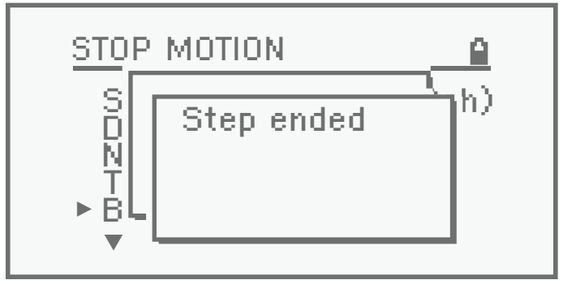
Moving to the last position

It is also possible to get back to the previous position in case you need to redo the shot.

To do so, select:
Home » Stop motion » Back to last shot



The following screen confirms reaching the position of previous step:

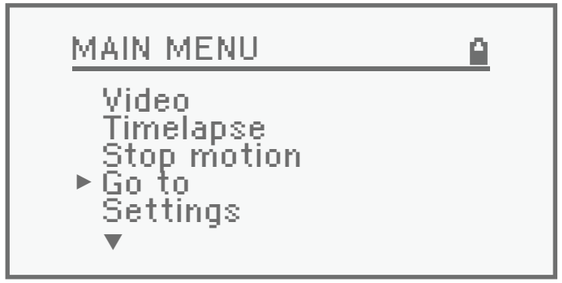


Using Go To mode

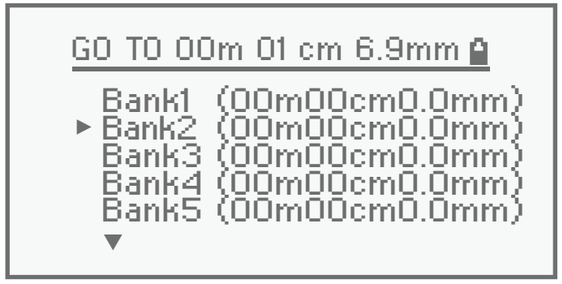
The OmniController is featured with 5 persistent, non-volatile memory banks allowing storage of five different positions and recalling them easily.

Accessing Go To mode

To access Go To mode, navigate to: **Home » Go To**



The following screen appears showing available memory banks with stored positions as well as the current position of the axis.

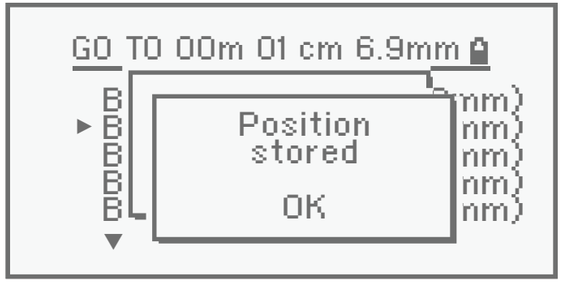


Storing position in memory

In order to store a position in one of memory banks do the following:

1. Make sure you are in the main screen of the Go To mode listing available banks.
2. Move the device to the desired position
3. Select a bank of your choice and select **Store Position** from the pop-up menu.

The following screen confirms that the position has been stored.



The absolute position will be displayed next to bank name confirming that the data has been saved.

Navigating to stored position

In order to move the device to a stored position, do the following:

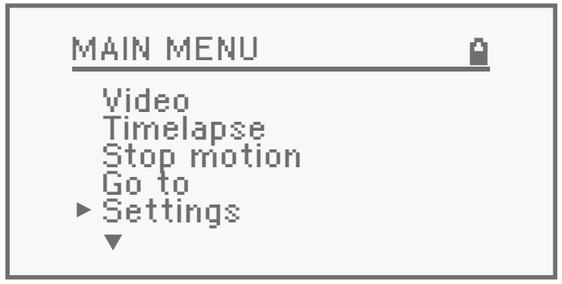
1. Navigate to **Home » Go To**
2. Select a bank of your choice
3. Select **Go To Position** from the pop-up menu.

The following screen displays the progress of the move. You may abort it by pressing the joystick.

The following screen confirms that the position has been reached.

10. Overview of the Settings menu

To access the settings menu choose: **Home » Settings**

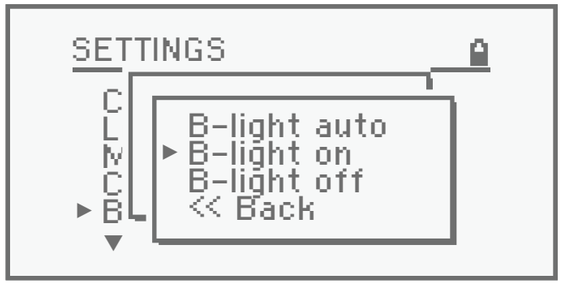


The following options are available:

Calibration, Length/Angle, Mirror and Controlled device options has been described in previous chapters.

Using backlight options

The **Backlight** option lets you switch between different backlight options.



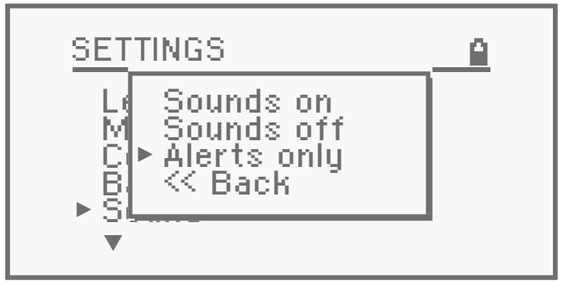
In **Backlight Auto** mode the the LCD display will be dimmed automatically after a certain period of time if the device is not operated. Use this option to maximize battery life and avoid unnecessary light artifacts on your long exposure timelapse shots.

In **Backlight On** option, the LCD backlight always remains on.

In **Backlight Off** option the LCD backlight always remains off. Please note that it might be difficult to read the screen in this mode so use it carefully.

Using Sounds options

The sounds menu allows you to set the sound preferences.



In the **Sounds On** mode all controller commands will be associated with audible sounds.

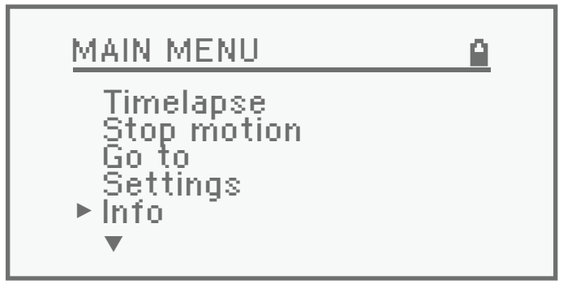
In the **Sounds Off** mode no sounds will be used.

In the **Alerts Only** mode the controller will emit sounds only for critical events such as confirmations or reaching limits.

Note: regardless of the sound setting in the controller, the DitoGear™ OmniSlider Servo main circuit board, located in the motor box, will emit sound signals in case of motor overheating or stalls.

Checking the firmware version

In order to check the firmware version and build, navigate to: **Home » Info**



Motor warning signals and behaviors.

The DitoGear™ OmniSlider Servo, OmniHead and LensDrive are equipped with an internal controller protecting the motor from damage in result of overload.

When the axis motor approaches the performance limit you will hear a short repeating beep from the motor box. It indicates that the motor is working under high payload and is close to its limits.

When an excessive load is put on the axis motor or the device is not properly calibrated and the motor tries to move against physical limit, the motor controller will prevent the damage to the motor by cutting the power off. You will hear the continuous beep sound coming from the motor box. It indicates the motor stall.

In this situation you need to press the reset button on the motor housing (OmniSlider, LensDrive) or reconnect signal cable (OmniHead) and probably re-calibrate the device.

Taking the above into account, calibrate the device carefully.

Emergency mode

In case of any abnormal operation of the OmniController, you may try to start the OmniController without reading the previously saved parameters.

Some issues may arise due to damaged, faulty or corrupted settings records present in the memory.

In order to run the OmniController emergency mode
do the following:

1. Power off the device
2. Wait 15 seconds
3. Connect the OmniController to the device or, to the stand-alone operation cable
4. Press and hold joystick
5. Turn on the power while the joystick is still pressed

11. Troubleshooting the OmniController

Prior to contacting support please check the following common issues and solutions.

1. The controller is dim and does not respond. The axis motor does not move.

   Ensure the power cable is connected, the battery is not depleted and the controller cable is connected to the device. Check that the cables are not damaged. Turn off the device and turn it on after ten seconds.

2. The device produces louder sound and does not move fluently.

   This is a normal behaviour of the stepper motor when the power supply level is low. Charge or replace the battery. If using a 3rd party DC adapter make sure it provides at least 12V 2A power for OmniSlider Stepper, 12V 5A for OmniSlider Servo or 12V 2A for other DitoGear™ motion control devices.

12. Using 3rd Party Power Adapters

DitoGear recommends using original DitoGear™ AC/DC power adapters and batteries.
While using a 3rd party adapter make sure it meets the requirements detailed in technical specifications table.

Caution!
DitoGear is not responsible for any damage or failures caused by the use of a 3rd party power supply adapter.

13. Precautions for Safe Use of DitoGear™ Power Cables

Power cables cannot be looped during operation due to insufficient heat rejection that can cause melting of the cable insulation and ultimately its failure. Remember to disconnect all power cables after use, especially during transportation.

14. Using DitoGear™ Power Packs

DitoGear™ Power Pack 7Ah/14Ah and DitoGear™ PowerBox include gel type lead acid batteries, that have a low voltage operating limit. When you discharge the battery below that limit, the irreversible chemical processes occur and the recharging performance can be affected. It is recommended not to fully discharge the battery.

The lead acid battery will self-discharge slowly over time. Leaving the battery for more than 3 months without recharging may result in damage. Remember to recharge the battery at least every 3 months.

15. Obtaining Support

In case of any technical issues that can't be solved by carefully reading the manuals do not hesitate to contact us at support@ditogear.com

16. Limited Warranty

DitoGear One (1) Year Limited Warranty
For DitoGear Products Only

Consumer rights and restrictions.

For consumers, who are covered by consumer protection laws or regulations in their country of purchase or, if different, their country of residence, the benefits conferred by this warranty are in addition to all rights and remedies conveyed by such consumer protection laws and regulations. This warranty does not exclude, limit or suspend any rights of consumers arising out of non-conformity with a sales contract. However, as described below, DitoGear disclaims statutory and implied warranties to the extent permitted by law, and in so far as such warranties cannot be disclaimed, all such warranties shall to the extent permitted by law be limited in duration to the duration of the express warranty described below and to the repair or replacement service as determined by DitoGear in its sole discretion. Some states (countries and provinces) do not allow limitations on how long an implied warranty or condition may last, so the limitations described above may not apply to you. This warranty gives you specific legal rights, and you may also have other rights that vary from state to state (or by country or province). This limited warranty is governed by and construed under the laws of the country in which the product purchase took place. DitoGear, the warrantor, under this limited warranty stands for DitoGear™ Robert Paluch, ul.Krańcowa 30, 62-002 Suchy Las, Poland.

Warranty.

DitoGear's warranty obligations for this hardware product are limited to the terms set forth herein. DitoGear warrants this DitoGear-branded hardware product against defects in materials and workmanship under normal use for a period of one (1) year from the date of retail purchase by the original end-user purchaser ("Warranty Period"). If a hardware defect arises and a valid claim is received within the Warranty Period, at its option and to the extent permitted by law, DitoGear will either (1) repair the hardware defect at no charge, using new or refurbished parts that are equivalent to new in performance and reliability, (2) exchange the product with a product that is new or refurbished that is equivalent to new in performance and reliability and is at least functionally equivalent to the original product, or (3) refund the purchase price of the product. DitoGear may request that you replace defective parts with user-installable new or refurbished parts that DitoGear provides in fulfillment of its warranty obligation.

A replacement product or part, including a user-installable part that has been installed in accordance with instructions provided by DitoGear, assumes the remaining warranty of the original product or ninety (90) days from the date of replacement or repair, whichever provides longer coverage for you.

When a product or part is exchanged, any replacement item becomes your property and the replaced item becomes DitoGear's property. Parts provided by DitoGear in fulfillment of its warranty obligation must be used in products for which warranty service is claimed. When a refund is given, the product for which the refund is provided must be returned to DitoGear and becomes DitoGear's property.

Exclusions and limitations.

To the extent permitted by law, this warranty and the remedies set forth above are exclusive and in lieu of all other warranties, remedies and conditions, whether oral, written, statutory, express or implied. As permitted by applicable law, DitoGear specifically disclaims any and all statutory or implied warranties, including, without limitation, warranties of merchantability and fitness for a particular purpose and warranties against hidden or latent defects. If DitoGear cannot lawfully disclaim statutory or implied warranties then to the extent permitted by law, all such warranties shall be limited in duration to the duration of the express warranty and to the repair or replacement service as determined by DitoGear in its sole discretion. Some states (countries and provinces) do not allow limitations on how long an implied warranty or condition may last, so the limitations described above may not apply to you. No DitoGear reseller, agent, or employee is authorized to make any modification, extension, or addition to this warranty. If any term is held to be illegal or unenforceable, the legality or enforceability of the remaining terms shall not be affected or impaired.

This Limited Warranty applies only to hardware products manufactured by or for DitoGear. The Limited Warranty does not apply to any non-DitoGear hardware products even if packaged or sold with DitoGear hardware. Manufacturers or suppliers, other than DitoGear, may provide their own warranties to the end user purchaser, but DitoGear, in so far as permitted by law, provides their products "as is".

DitoGear does not warrant that the operation of the product will be uninterrupted or error-free. DitoGear is not responsible for damage arising from failure to follow instructions relating to the product's use.

This warranty does not apply: (a) to consumable parts, such as batteries, unless damage has occurred due to a defect in materials or workmanship; (b) to cosmetic damage, including but not limited to scratches, dents and broken elements on ports; (c) to damage caused by use with non-DitoGear products; (d) to damage caused by accident, abuse, misuse, liquid contact, fire, earthquake or other external causes; (e) to damage caused by operating the product outside the permitted or intended uses described by DitoGear; (f) to damage caused by service (including upgrades and expansions) performed by anyone who is not a representative of DitoGear; (g) to a product or part that has been modified to alter functionality or capability without the written permission of DitoGear; (h) to defects caused by normal wear and tear or otherwise due to the normal aging of the product.

Except as provided in this warranty and to the extent permitted by law, DitoGear is not responsible for direct, special, incidental or consequential damages resulting from any breach of warranty or condition, or under any other legal theory, including but not limited to loss of use; loss of revenue; loss of actual or anticipated profits (including loss of profits on contracts); loss of the use of money; loss of anticipated savings; loss of business; loss of Opportunity; loss of goodwill; loss of reputation; loss of, damage to or any indirect or consequential loss or damage howsoever caused including the replacement of equipment and property. The foregoing limitation shall not apply to death or personal injury claims, or any statutory liability for intentional and gross negligent acts and/or omissions. Some states (countries and provinces) do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

Obtaining warranty service.

DitoGear will provide warranty service either (i) at an DitoGear Retail or DitoGear Authorized Service Provider (“ASP”) location, where service is performed at the location, or the DitoGear Retail or ASP may send the product to an DitoGear repair service location for service, (ii) by sending you prepaid way bills (and if you no longer have the original packaging, DitoGear may send you packaging material) to enable you to ship the product to DitoGear’s repair service location for service, or (iii) by sending you customer installable new or refurbished replacement product or parts to enable you to service or exchange your own product (“DIY Service”). Upon receipt of the replacement product or part, the original product or part becomes the property of DitoGear and you agree to follow instructions, including, if required, arranging the return of original product or part to DitoGear in a timely manner. When providing DIY Service requiring the return of the original product or part, DitoGear may require a credit card authorization as security for the retail price of the replacement product or part and applicable shipping costs. If you follow instructions, DitoGear will cancel the credit card authorization, so you will not be charged for the product or part and shipping costs.

If you fail to return the replaced product or part as instructed or the replaced product or part is not eligible for warranty service, DitoGear will charge the credit card for the authorized amount.

Please access and review the online help resources at the DitoGear website (www.ditogear.com) and contained in the product manual before requesting warranty service. If the product is still not functioning properly after making use of these resources, please contact DitoGear at support@ditogear.com.

Service options, parts availability and response times may vary according to the country in which service is requested. Service options are subject to change at any time. You may be responsible for shipping and handling charges if the product cannot be serviced in the country in which service is requested. If you seek service in a country that is not the country of purchase, you will comply with all applicable import and export laws and regulations and be responsible for all custom duties, VAT. and other associated taxes and charges. For international service, DitoGear may repair or exchange defective products and parts with comparable products and parts that comply with local standards. In accordance with applicable law, DitoGear may require that you furnish proof of purchase details before receiving warranty service.

17. Privacy

DitoGear will maintain and use customer information in accordance with the DitoGear Customer Privacy Policy available at ditogear.com/legal/privacy-policy/.

18. Miscellaneous

Trademarks and copyrights

Disposal and recycling information

The device and all batteries included with it must be disposed of properly according to local laws and regulations. The product must be disposed of separately from the household waste. When your product reaches its end of life, contact DitoGear or your local authorities to learn about recycling options.

WWW.DITOGEAR.COM